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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/648,805	08/27/2003	Hiroaki Aizawa	14-018	3931

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EXAMINER	
MANCHO, RONNIE M	

ART UNIT	PAPER NUMBER
3663	

DATE MAILED: 05/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/648,805	AIZAWA ET AL.	
	Examiner	Art Unit	
	Ronnie Mancho	3663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 August 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *2/15/05; 8/27/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-32 are rejected under 35 U.S.C. 102(b) as being anticipated by Kajiwara (5234071).

Regarding claim 1, Kajiwara (abstract, figs. 1-13) discloses a creep (i.e. when vehicle is moving at a constant slow speed especially in traffic; col. 1, lines 13-24) drive control device that executes, when a driver of a vehicle does not have either one of an intention to accelerate (i.e. does not step on the accelerator) the vehicle and an intention to maintain stopping (i.e. when driver does not apply brakes) of the vehicle, at least one of adjustment of a braking force applied (col. 1, lines 44-54) to the vehicle and adjustment of a driving force of the vehicle so as to execute control such that a vehicle speed becomes a value within a fixed range (i.e. when vehicle is moving a constant speed or on cruise control; col. 1, lines 6-12; lines 44-54).

Regarding claim 2, Kajiwara (abstract, figs. 1-13) discloses the creep drive control device comprising:

an engine output control unit (col. 1, lines 6-12; lines 25-54) that controls an engine output in accordance with an engine control amount;

a braking force control unit (col. 1, lines 6-12; lines 25-54) that controls a braking force applied to each wheel in accordance with a brake control amount; an acceleration intention determination unit that determines whether a driver has an acceleration intention;

a stop maintenance intention determination unit (col. 1, lines 6-12; lines 25-54) that determines whether the driver has a stop maintenance intention; a target creep vehicle speed setting unit that sets a target creep vehicle speed;

a vehicle speed acceleration unit (col. 1, lines 55-67) that increases a vehicle speed by at least one of increasing the engine output and decreasing the braking force;

a vehicle speed deceleration unit (col. 1, lines 6-12; lines 25-54) that decreases a vehicle speed by at least one of decreasing the engine output and increasing the braking force;

a starting assistance control unit (col. 1, lines 6-12; lines 25-54) which, when respective results of determinations by the acceleration intention determination unit and the stop maintenance intention determination unit are negative, operates using a creep driving mode in which the vehicle speed acceleration unit is operated when the vehicle speed is less than a first target vehicle speed that is smaller than the target creep vehicle speed by a predetermined amount, and in which the vehicle speed deceleration unit is operated when the vehicle speed is larger than a second target vehicle speed that is larger than the target creep vehicle speed by a predetermined amount (columns 5-8).

Regarding claim 3, Kajiwara (abstract, figs. 1-13) discloses the creep drive control device according to claim 2, wherein the acceleration intention determination unit determines that the driver has the acceleration intention when a shift position of an automatic transmission is set to a drive operable position by the driver, and when the acceleration intention determination unit

detects at least one of an accelerator opening being equal to a predetermined amount, the vehicle speed being equal to or above a predetermined value, and the drive of the vehicle being controlled by an automatic driving control other than the control executed by the starting assistance control unit.

Regarding claim 4, Kajiwara (abstract, figs. 1-13) discloses the creep drive control device according to claim 2, wherein the stop maintenance determination unit determines that the driver has the stop maintenance intention when the stop maintenance determination unit detects at least one of setting of a shift position of an automatic transmission to a drive inoperable position by the driver, execution of a brake operation that generates braking force capable of causing stop maintenance of the vehicle, and execution of an automatic stop control that automatically stops the vehicle.

Regarding claim 5, Kajiwara (abstract, figs. 1-13) discloses the creep drive control device according to claim 2, wherein the target creep vehicle speed setting unit sets the target creep vehicle speed by correcting a pre-set reference creep vehicle speed in accordance with at least one of a driving state of the vehicle, a road surface condition, and a driving operation of the driver.

Regarding claim 6, Kajiwara (abstract, figs. 1-13) discloses the creep drive control device according to claim 5, wherein the target creep vehicle speed setting unit executes correction such that the target creep vehicle speed becomes larger as an accelerator opening becomes larger.

Regarding claim 7, Kajiwara (abstract, figs. 1-13) discloses the creep drive control device according to claim 5, wherein the target creep vehicle speed setting unit executes correction such that the target creep vehicle speed becomes smaller as a brake operation amount becomes larger.

Regarding claim 8, Kajiwara (abstract, figs. 1-13) discloses the creep drive control device according to claim 5, wherein the target creep vehicle speed setting unit executes correction such that the target creep vehicle speed when the vehicle is moving in a backward direction is smaller than the target creep vehicle speed when the vehicle is moving in a forward direction.

Regarding claim 9, Kajiwara (abstract, figs. 1-13) discloses the creep drive control device according to claim 5, wherein the target creep vehicle speed setting unit executes correction such that the target creep vehicle speed becomes smaller as a distance becomes smaller between the vehicle and an obstacle in a forward direction of the vehicle.

Regarding claim 10, Kajiwara (abstract, figs. 1-13) discloses the creep drive control device according to claim 5, wherein the target creep vehicle speed setting unit executes correction such that the target creep vehicle speed becomes larger on a road with a downward gradient, and the target creep vehicle speed becomes smaller on a road with an upward gradient.

Regarding claim 11, Kajiwara (abstract, figs. 1-13) discloses the creep drive control device according to claim 5, wherein the target creep vehicle speed setting unit executes correction such that the target creep vehicle speed becomes larger in accordance with a length of continuation of a state in which the braking force generated by the braking force control unit is equal to or above a predetermined value.

Regarding claim 12, Kajiwara (abstract, figs. 1-13) discloses the creep drive control device according to claim 2, wherein the target creep vehicle speed setting unit sets, when a deviation between a present vehicle speed and the target creep vehicle speed is larger than a predetermined value, a new target creep vehicle speed that is the sum of the present vehicle speed and a value that accords with the deviation.

Regarding claim 13, Kajiwara (abstract, figs. 1-13) discloses the creep drive control device according to claim 2, wherein the vehicle speed acceleration unit increases the vehicle speed by increasing the engine output after decreasing the braking force.

Regarding claim 14, Kajiwara (abstract, figs. 1-13) discloses the creep drive control device according to claim 2, wherein the vehicle speed deceleration unit decreases the vehicle speed by increasing the braking force after decreasing the engine output.

Regarding claim 15, Kajiwara (abstract, figs. 1-13) discloses the creep drive control device according to claim 14, wherein the vehicle speed deceleration unit decreases the vehicle speed by decreasing the engine output, and following this, increasing a gear ratio of a transmission.

Regarding claim 16. , Kajiwara (abstract, figs. 1-13) discloses the creep drive control device according to claim 2, wherein the vehicle speed acceleration unit increases the vehicle speed by at least one of setting a second engine control amount with which the engine output is controlled by the engine output control unit as the sum of the engine control amount and an engine control increase amount, and setting a second brake control amount with which the braking force is controlled by the braking force control unit as the brake control amount minus a brake decrease amount.

Regarding claim 17, Kajiwara (abstract, figs. 1-13) discloses the creep drive control device according to claim 2, wherein the vehicle speed deceleration unit decreases the vehicle speed by at least one of setting a second brake control amount with which the braking force is controlled by the braking force control unit as the sum of the brake control amount and a brake control increase amount, and setting a second engine control amount with which the engine

output is controlled by the engine output control unit as the engine control amount minus an engine decrease amount.

Regarding claim 18, Kajiwara (abstract, figs. 1-13) discloses the creep drive control device according to claim 16, wherein the engine control increase amount and the brake control increase amount are respectively set in accordance with a deviation between the vehicle speed and the target creep vehicle speed.

Regarding claim 19, Kajiwara (abstract, figs. 1-13) discloses the creep drive control device according to claim 18, wherein the engine control increase amount and the brake control increase amount are respectively corrected in accordance with at least one of a driving state of the vehicle, a road surface condition, and a driving operation of the driver.

Regarding claim 20, Kajiwara (abstract, figs. 1-13) discloses the creep drive control device according to claim 16, wherein the brake decrease amount is set by correcting an amount that accords with a deviation between the braking force that accords with the brake control amount and a braking force that accords with a brake operation amount, using at least one of an accelerator opening and a road surface coefficient of friction.

Regarding claim 21, Kajiwara (abstract, figs. 1-13) discloses the creep drive control device according to claim 17, wherein the engine decrease amount is set by correcting an amount that accords with a deviation between the vehicle speed and the target creep vehicle speed, using at least one of a brake operation amount and a road surface coefficient of friction.

Regarding claim 22, Kajiwara (abstract, figs. 1-13) discloses the creep drive control device according to claim 2, wherein the vehicle speed acceleration unit limits the engine control amount such that the engine control amount is equal to or less than an upper limit value.

Regarding claim 23, Kajiwara (abstract, figs. 1-13) discloses the creep drive control device according to claim 22, wherein the vehicle speed acceleration unit executes correction of the upper limit value in accordance with at least one of a driving state of the vehicle, a road surface condition, and a driving operation of the driver.

Regarding claim 24, Kajiwara (abstract, figs. 1-13) discloses the creep drive control device according to claim 16, wherein the vehicle speed acceleration device executes correction such that the engine control increase amount becomes smaller in either one of a case that the vehicle speed is a value proximate to zero, and a case that a gradient of a road surface is a downward gradient.

Regarding claim 25, Kajiwara (abstract, figs. 1-13) discloses the creep drive control device according to claim 16, wherein the vehicle speed acceleration unit executes correction such that the engine control increase amount becomes smaller in accordance with any one of an accelerator opening becoming smaller, a brake operation amount becoming larger, and a road surface coefficient of friction becomes smaller

Regarding claim 26, Kajiwara (abstract, figs. 1-13) discloses the creep control device according to claim 22, wherein, when the engine control amount is limited to being equal to or less than the upper limit value, the vehicle speed acceleration unit suspends engine output control when the vehicle is either one of stationary and moving in a direction opposite to a direction of travel of the vehicle, and along with this, the starting assistance control unit causes the braking force control unit to generate a stop maintenance braking force for stop maintenance of the vehicle.

Regarding claim 27, Kajiwara (abstract, figs. 1-13) discloses the creep drive control device according to claim 17, wherein the vehicle speed deceleration unit executes correction such that the brake control increase amount becomes larger in accordance with any one of an accelerator opening becoming smaller, a brake operation amount becoming larger, and a road surface coefficient of friction becoming larger.

Regarding claim 28, Kajiwara (abstract, figs. 1-13) discloses the creep drive control device according to claim 17, wherein the vehicle speed deceleration unit executes correction such that the brake control increase amount becomes larger when a gradient of a road surface is a downward gradient.

Regarding claim 29, Kajiwara (abstract, figs. 1-13) discloses the creep drive control device according to claim 16, wherein, when the vehicle speed increases following decrease of the engine output by the vehicle speed deceleration unit, the braking force control unit switches the wheel to which the braking force is applied during a period in which the braking force is applied.

Regarding claim 30, Kajiwara (abstract, figs. 1-13) discloses the creep drive control device according to claim 16, wherein the braking force control device is provided with a first braking unit that applies braking force to each wheel, and a second braking unit which applies braking force to each wheel independently of the first brake unit, and when the vehicle speed increases following decrease of the engine output by the vehicle speed deceleration unit, the braking force control unit switches between generation of the braking force by the first braking unit and generation of the braking force by the second braking unit, during a period in which the braking force is applied.

Regarding claim 31, Kajiwara (abstract, figs. 1-13) discloses the creep drive control device according to claim 2, wherein the starting assistance control unit causes the engine control amount to change such that the engine control amount agrees with an amount that accords with an accelerator pedal operation amount of the driver, when the creep driving mode is completed.

Regarding claim 32, Kajiwara (abstract, figs. 1-13) discloses the creep drive control device according to claim 2, wherein the starting assistance control unit causes the brake control amount to change such that the brake control amount agrees with an amount that accords with a brake pedal operation amount of the driver, when the creep (i.e. slow speed)driving mode is completed (colums 5-8).

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following: US 4969103, US 20020134602A1, US 2002/0020247), US006769504B2, and US006339740B1 all disclose a vehicle control system.

Communication

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ronnie Mancho whose telephone number is 703-305-6318. The examiner can normally be reached on Mon-Thurs: 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Black can be reached on 703-305-9707. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ronnie Mancho
Examiner
Art Unit 3663

5/2/05

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